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ABSTRACT

Because item order and salience may affect the findings of social science research, a study was conducted to determine the effect of topic salience on subject response to different item orders. In the study, 10 high salience self-esteem items were presented with 10 low salience items concerning product labels in three versions. In the first version, all the self-esteem items were followed by all the label items; in the second version, all the label items were followed by all the self-esteem items; and in the third version, the 20 items were scrambled. Subjects, 128 college students enrolled in a course in human communication, rated the items on a five point likert-type scale from "very unimportant" to "very important." Only those persons who perceived self-esteem to be more important than product labels were used in the analysis of the data. Results indicated that the more deeply held an attitude, the more salient it may be regarded to be and the less likely it is to be affected by any surrounding questions; issues of only passing concern, however, may be strikingly affected by the surrounding context of questions. These findings indicate that extreme care should be taken in interpreting responses of people with little interest in the issue at hand, that data should be factor analyzed, and that respondents should probably be asked how important an issue is to them whenever a questionnaire is administered. (JL)

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# The Effect of Topic Salience on the Responses to Different Item Orders

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Summary

This study demonstrated that when a topic has low salience, responses to questions about the topic vary greatly depending on the order in which the low salience items are presented. The same responsdents (N = 93) were also questioned about a high salience topic. Regardless of the order of presentation of items, high salience responses did not differ. It was concluded that the order of question presentation in survey research may be a crucial variable if the topic is not an important one for respondents.

# The Effect of Topic Salience on the Responses to Different Item Orders

Perhaps there is no greater concern in the social sciences than with the development of reliable measurement scales. Recognizing that individual differences among subjects, changing times, and even different experimenters will affect the outcomes of a study (Rosenthal & Rosnow, 1969), the efforts to find a consistent measurement tool for a given phenomenon are understandably immense. There is, however, one area of scale development which has been consistently overlooked in the search for reliable social sciences scales: item order. The ordering of scale items becomes of paramount concern when we observed that virtually no social scientist would dream of trying to assess an individual's level of personality or social orientation by asking a single question. Surely, the reasoning goes, multiple items have a better chance to tap a domain than any single item could. Moreover, there is convincing evidence that multiple items are more reliable than any single item could be (Cascio, Valenzi & Silbey, 1978; Cascio, Valenzi & Silbey, 1980). The problem is that with the addition of each item we increase the possible order of items by a factor of N!. For even a short ten-item scale there are 3,628,800 different item orders which might be utilized; for a 20 item scale the number becomes $24 \times 10^{18}$ different possible orders of presentation. The logical query is therefore: are the answers given to any multiple item scale a function of the surrounding scale items? In other words, do different item orders yield different response patterns?

Part of the neglect concerning the topic of item order may stem from the rather convincing evidence provided by an early study (Bradburn & Mason, 1964). Using an NORC sample and asking questions about life satisfaction e.g., money, work, health, children and so forth, no systematic differences were found using several different sequences of questions. Recently, however, a number of studies (Johnson, Sieviking & Clanton, 1974; Kraut, Wolfson & Rothenberg, 1975; Noelle-Neuman, 1970) have brought these early findings into question. Presumably there must be some circumstances in which item order is an important factor in response patterns.

At least part of the answer may lie in the salience of the issue for respondents: those issues which are deemed central, ego-involving or crucial to a person. In the Bradburn and Mason study (1964) the questions concerned major life satisfactions, a highly salient topic for most people. On the other hand, the salience levels of the studies finding an item order effect have ranged from very low to questionable. One of the studies asked high school and college students what changes they would "like to see in the news presentations by television, radio and newspapers" (Johnson, et al., 1974, p. 776). Another asked West Germans about the "labels for pickled cucumbers, tubed mustard, etc." (Noelle-Neuman, 1970, p. 193). The third study was clearly tapping a more important topic when employees were asked about "pay, job security and advancement" (Kraut, et al., 1975). Unfortunately, the specific questions asked about the pay, job security and advancement were not reported. It is possible that the questions may have been phrased in very personal terms (high salience) or very impersonal terms (low salience). Without being able to see the questions, it is not possible to make a judgment.

The emerging question appears to be rather clear cut: What is the effect of topic salience on the responses to different item orders? One way to answer this question is to obtain responses for both salient and non-salient topics using a variety of item orders. That is the purpose of this study.

## Method

### Measures:

One of the most central concepts of personality is self-esteem. While self-esteem may not be the most salient issue for every person, it is probably near the top of the list for most people. To underscore the importance of the concept, we need only observe that there have been over two thousand publications pertaining to the self (Gordon & Gergen, 1968), and over fifty scales to measure self-esteem (Robinson & Shaver, 1973). For any investigation which seeks to tap a salient concept, self-esteem would appear to be worth considering.

The specific scale chosen to measure salience in this study was the Rosenberg scale of self-esteem (Rosenberg, 1965). This 10-item scale was specifically developed for use with young adults and has a known and stable factor structure (Hensley & Roberts, 1976; Hensley, 1977).

The non-salient scale was a set of 10 items devised specifically for this study. Pretesting indicated these 10 items were quite peripheral for most college students. The questions, shown in Table 1, concerned product labels.

Procedure:

Student volunteers (N = 128) enrolled in a course in human communication at a large southeastern university served as subjects for the study. Three forms of a questionnaire were prepared. Version 1 placed all the self-esteem items first followed by the label items; version 2 presented the label items first followed by self-esteem items; version 3 was a scrambled presentation of all 20 items. After the collection of the data all 128 subjects were debriefed as to the purpose of the study.

## Results

As a manipulation check each respondent was asked to rate the importance of product labels and self-esteem in their lives using a five point likert-type scale ranging from "very unimportant" to "very important." In order to maintain the purity of the test, only those persons who perceived self-esteem to be more important than product labels were used in the analysis. It is revealing that the demand characteristics of the testing situation were so great that the 35 respondents (27%) who were dropped from the analysis reported product labels to be as important or more important than self-esteem. A large number of studies may, in essence, "create" salience where little if any real salience exists.

In order to ascertain that the reversed salience--product labels equal to or greater than self-esteem--was not disproportionately centered on one form of the test, an analysis was conducted to investigate this possibility. This conjecture may be discounted. None of the three forms of item order was any more likely than the others to elicit reversed salience ($\underline{X}^2 = 2.22$; $\underline{df} = 2$, $\underline{p}$ is n.s.).

The primary analysis was conducted via a series of one-way analysis of variance calculations. The results are shown in Table 1. As indicated, no F-ratio for the self-esteem items was significant. For the labeling questions however, three of the ten items were statistically significant.

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Insert Table 1 about here

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While we know that self-esteem is a unidimenstional variable (Hensley & Roberts, 1976), it was not possible to ascertain the factor structure of the product label questions prior to the study. Hence, it is possible we may be measuring the same factor three times. In short, if items 13, 17, and 20 are all measures of the same concept there are not three significant findings. Rather, there is one significant difference which has simply been measured three times. Fortunately, recent investigations (Acito & Anderson, 1980) have demonstrated that even samples as small as 100 may be fruitfully factor analyzed to determine the underlying structure of the data. In order to be as thorough as possible, both alpha and image factor analyses were performed on the ten item product label scale. It is to be noted that both alpha and image have been shown to be superior to principle components for small samples (Acito & Anderson, 1980). Alpha analysis revealed a four factor structure; most importantly, each item--whether rotated to a varimax or an oblique solution--loaded on a separate factor. The image factor analysis produced a five factor solution for both varimax and oblique rotations and, again, items 13, 17, and 20 each loaded on a separate factor. These findings would tend to support the conclusion that we are not examining a single underlying variable.

Finally, it might be asked if any version of the questionnaire--self-esteem first followed by product labeling, product labeling followed by self-esteem, or a scrambled version of the two--resulted in a systematically higher or lower set of evaluations among respondents. A Kruskal-Wallis one-way analysis of varience for the product label means indicated that none of the three versions of the questionnaire seemed to be any more or less prone to aberrant scores ($\underline{X}^2 = 0.96$; $\underline{df} = 2$; $\underline{p}$ is n.s.). There is no discernible pattern of scores among the three versions of the questionnaire.

## Discussion

The rationale underlying these findings is apparent on reflection. The more deeply held an attitude, the more salient it may be regarded to be and the less likely it is to be affected by any surrounding questions. On the other hand, an issue which has only passing concern might be expected to vacillate from time to time and could easily be altered by context. Asking a person about their feelings toward their child will probably elicit the same response regardless of where in the questionnaire the question is posed. Asking the same person their opinions about a favorite brand of washcloth could yield strikingly different answers depending on the surrounding context of questions.

The emerging implications for attitudinal research seem to be clear. First, if we ask questions of respondents who have little interest in the topic at issue, extreme care should be taken in interpreting their responses. Second, when responses are found which differ by question order such responses should be routinely examined to ascertain whether they are simply the same question being asked in a variety of different ways. That is,

the data should be factor analyzed. Third, respondents should probably be asked how important an issue is to them whenever a questionnaire is administered.

The argument being made here is not that we may solve all the problems of attitude measurement by ascertaining salience levels among respondents. However, it probably is the case that we may considerably increase the current level of research sophistication by utilizing this and other related improvements.

In sum, then, this study has identified one area of potential explanation on the issue of response differences triggered by item ordering. At least one of the troublesome variables in this area appears to be topic salience. In addition to providing future researchers with a useful bit of information, it is hoped that this study will provide the catalyst necessary to prompt the search for other variables affecting response patterns.

Footnotes

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Table 1

Comparison of item means for each Form of the Questionnaire

| Item Number | Self-esteem | Mean for: I (N = 29) | II (N = 30) | III (N = 34) | F |
|---|---|---|---|---|---|
| 1. | At times I think I am no good at all | 2.66 | 2.31 | 2.63 | 0.67 |
| 2. | I take a positive attitude toward myself | 3.97 | 4.10 | 4.03 | 0.39 |
| 3. | All in all, I am inclined to feel that I am a failure | 1.62 | 1.59 | 1.38 | 0.96 |
| 4. | I wish I could have more respect for myself | 2.41 | 2.55 | 2.59 | 0.25 |
| 5. | I certainly feel useless at times | 2.76 | 2.83 | 2.53 | 0.54 |
| 6. | I feel that I am a person of worth, at least on an equal plane with others | 4.28 | 4.37 | 4.39 | 0.32 |
| 7. | On the whole, I am satisfied with myself | 3.93 | 3.83 | 4.12 | 0.95 |
| 8. | I feel I do not have much to be proud of | 1.55 | 1.73 | 1.61 | 0.47 |
| 9. | I feel that I have a number of good qualities | 4.24 | 4.33 | 4.30 | 0.20 |
| 10. | I am able to do things as well as most other people | 4.10 | 4.13 | 4.03 | 0.18 |

Table 1 (continued)

| | Product Labels | Mean for: I | II | III | F |
|---|---|---|---|---|---|
| 11. | I don't like product labels which are outlined by a white border | 2.62 | 2.70 | 2.71 | 0.13 |
| 12. | A good product label on a jar is rectangular rather than square | 3.03 | 3.13 | 3.35 | 1.15 |
| 13. | Product labels showing pictures of people annoy me | 2.45 | 3.17 | 2.88 | 3.58* |
| 14. | I dislike fancy designs on labels of things like pickled cucumbers | 2.66 | 2.87 | 2.85 | 0.43 |
| 15. | Products should never use clashing colors on their labels | 2.72 | 3.03 | 2.94 | 0.74 |
| 16. | On a jar of mustard, I like brightly colored labels | 3.34 | 3.13 | 3.24 | 0.62 |
| 17. | When I see a jar on the shelves at a grocery store, I want to be able to clearly read the brand name | 4.17 | 4.63 | 4.03 | 7.74** |
| 18. | I don't like a lot of small print on product labels | 3.48 | 3.60 | 3.53 | 0.10 |
| 19. | I think a label on a jar of mustard ought to go all around the jar | 2.31 | 2.53 | 2.47 | 0.76 |
| 20. | The best label on a product is one which has contrasting colors | 3.17 | 3.00 | 3.59 | 4.26* |

* $p < .05$

** $p < .001$